REMARKS

Claims 1-46 were pending at the time of the Final Rejection

Applicants respond to the Final Rejection of December 10, 2007 by filing an RCE with claims amended in accordance with this Preliminary Amendment and with new claims 47-51.

It is considered that the set of formal drawings submitted in the last .Amendment before the Final Rejection has been accepted and that all outstanding formal objections were successfully addressed in the last Amendment.

In the Final Rejection: claims 1, 5, 7, 15, 21, 23, 24, 26, 40, 42 and 43 were rejected as being anticipated by Kennedy et al US 2004/0216582. The main independent claims 1, 23 and 42 of the application have been amended to better illustrate the data processing network aspect of the invention and the problems encountered and to be solved. Independent claim 1 is directed to a method of tuning a topology of relationships between a plurality of self-organizing software agents. Independent claim 23 is directed to the topology tuner agent operable in a data processing system and describes the operation of its computer program code. Independent claim 42 is the apparatus analog of independent method claim 1.

In the amendments to the independent claims it is emphasized that there are a plurality of established criterions for system topology of the inter- agent relationships of a plurality of self-organizing software agents. In a preferred embodiment, as set forth in new claims 47-49, two of the plurality of established criterions can be, for example, a topology similar to that of the "power curve" type, i.e.,

more connections to fewer of the agents so as to make the system relatively robust

against random agent (node) failure, or to have the topology that is more similar to a

"bell (Gaussian) curve" random type so that the system will be more robust against

attack on individual agents (nodes). The claims set forth that information of the current

topology of the system is obtained in terms of inter-agency relationships. Then, a

recommendation is made to at least one of the plurality of agents so that its topology

can be tuned to more closely approach a selected one of the plurality of established

criterions.

        The Kennedy patent publication is not at all similar to the invention as set

forth in the amended and new claims. Kennedy is directed to an ad hoc communication

network whose purpose is to establish links between a plurality of wireless mobile

nodes to allow the transmission of data between a source node and a destination node.

This is not a data processing system formed by a plurality of self-organizing software

agents as set forth in the independent claims. Kennedy operates to use the network

routes to predict failure and to perform route maintenance based upon predicted route

failure. There is nothing in the Kennedy patent publication that corresponds to the

claimed subject matter of the establishment of the plurality of topology criterions,

obtaining the current status of the system topology and then making a recommendation

to at least one of the agents based on the obtained information to modify its topology to

more closely correspond to a selected one of the plurality of established criterions.

        Kennedy is directed to and indeed only describes an IT system in which all

relationships between nodes are of the same type, are formed for the same purpose,

16

and are evaluated by the same criterion. That is, the nodes are all devoted to the task of routing and forwarding messages. Kennedy's invention specifically addresses the goal of enabling messages to flow across a communications network. Kennedy is all about maintaining global connectivity in the face of node failures.

In marked contrast to Kennedy the subject invention is directed to a data processing system that includes a plurality of software agents of the self–organizing type. In such a system the relationships among software agents are of arbitrary nature and in which the agents provide arbitrary services to one another. For example, the relationship between agents may be one in which one agent receives stock-price data from another, or one agent performs validation of credit-card numbers at the request of another agent, or one agent acts as a data-storage provider for another, etc. This means that the nature of the relationships, and the criterions for determining whether a given relationship is desirable or not, are unknown and in principle unknowable to the modification or tuning of the topology.

Using the principles of the invention the overall system topology will be tuned according to established criterions or goals. Kennedy only uses techniques that discover and evaluate "routes" and that perform "route maintenance" with an eye toward maintaining a communications network. Unlike Kennedy, the current invention is not addressed to "repairing the network", but to "modifying the topology". Kennedy focuses exclusively on changing the routes taken by messages in order to cope with node failures. In contrast to this, the present invention can be used to cause agents to re-evaluate possible service-providers and elect to change to a "better" service provider,

17

e.g., where no node failure is contemplated, and where the meaning of "better" has nothing to do with maintaining global network connectivity as in Kennedy.

Therefore, the independent claims 1, 23 and 42 recite novel and advantageous subject matter. These claims, as well as their respective dependent claims, are patentable over Kennedy and should be allowed.

In the Final Rejection a number of pieces of secondary art were cited in rejecting dependent claims other than those listed above. All of this secondary art, with one exception noted below, is discussed in the last Amendment. It is sufficient to say that none of the secondary art cures the basic defects of Kennedy discussed above with respect to the amended independent claims 1, 23 and 42.

In the Final Rejection the Examiner cited a new publication, Bettstetter "On The Minimum Node Degree and Connectivity of a One Hop Network". Bettstetter was applied against claims such as 9 and 10 to show Gaussian and scale free networks. Bettstetter suffers exactly the limitations as Kennedy. It deals solely with communications networks, and solely with the issue of maintaining global connectivity across the network (i.e, so that there is a communication path from every node to every other one). In that respect, Bettstetter is no different from any other paper in the large body of mathematical work involving graph-connectivity. Accordingly, the combination of Bettstetter with Kennedy does not support a rejection of any of the claims of the application as being unpatentable.

The Examiner is respectfully requested to reconsider the subject matter of this application and pass it to issue.

Prompt and favorable action is respectfully requested.

Respectfully submitted:

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Date

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